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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,884	02/13/2002	Krishnaswamy Ramkumar	5298-08000 PM01040	6510
35617	7590	08/22/2007		
DAFFER MCDANIEL LLP			EXAMINER	
P.O. BOX 684908			ERDEM, FAZLI	
AUSTIN, TX 78768				
			ART UNIT	PAPER NUMBER
			2826	
			MAIL DATE	DELIVERY MODE
			08/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/074,884

Applicant(s)

RAMKUMAR, KRISHNASWAMY

Examiner

Fazli Erdem

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-8, 19-21, 23, 24, 26, 27, 30 and 32-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6-8, 19-21, 23 and 24 is/are allowed.
- 6) ☒ Claim(s) 26, 27, 30 and 32-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Response to Arguments

Regarding Claim 26, applicant's arguments have been fully considered but they are not persuasive. Specifically, in column 2, lines, 35-60, DeTar discloses the required ozonated deuterium oxide substance.

Allowable Subject Matter

1. Claims 6-8, 19-21, 23, 24 allowed.
2. The following is an examiner's statement of reasons for allowance:

Regarding Claims 6-8, prior art failed to establish the required thickness variation of less than 5%. Regarding Claims 19-21, 23 and 24, prior art failed to establish the required temperature combination.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 26, 27, 30, 33 and 35 rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner et al. (6,245, 652) in view of DeTar (6,077,791).

Regarding Claim 26, Gardner et al. teach a method of making semiconductor device comprising growing an oxide film 14 in Fig. 2, upon a semiconductor topography 10, depositing a silicon nitride film 16, upon and in contact with the oxide film. Gardner et al. fail to disclose the required ozonated substance comprising deuterium oxide. However, DeTar discloses a method of forming passivation layer using deuterium containing reaction gases where in column 2, lines 61-63, column 3 lines 50-67 and in claim 1, the required ozonated deuterium oxide substance is disclosed.

It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include the required ozonated dionized water rinse in Gardner et al. as taught by DeTar in order to have a oxide/dielectric/passivation layer with long term reliability (column 4, lines 1-7).

Regarding Claim 27, oxide layer of Gardner et al. has a thickness of 6-10 angstroms in column 3, lines 30-32.

Regarding Claim 30, oxide layer 14 of Gardner et al. is being grown at a temperature 700-900 degree Celcius in column 3, lines 35-45.

Regarding Claim 33, annealing layers in nitrous oxide is disclosed in Gardner et al. column 3, lines 40-41 and annealing layers in ammonia is disclosed in Gardner et al. column 4, lines 49-50.

Regarding Claim 35, in claim 1 of DeTar, the ozonated deuterium oxide is in vapor/gas form.

7. Claims 32 and 34 rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner et al. (6,245, 652) in view of DeTar (6,077,791) further in view of Foglietti et al. (2002/0142500).

Regarding Claims 32 and 34, Gardner et al. teach a method of making semiconductor device comprising growing an oxide film 14 in Fig. 2, upon a semiconductor topography 10, depositing a silicon nitride film 16, upon and in contact with the oxide film. Gardner et al. fail to disclose the required ozonated substance comprising deuterium oxide. Furthermore, DeTar discloses a method of forming passivation layer using deuterium containing reaction gases where in column 2, lines 61-63, column 3 lines 50-67 and in claim 1, the required ozonated deuterium oxide substance is disclosed. Gardner and DeTar combination fail to disclose the required concentration of the ozonated substance and the required liquid form of the ozonated substance. However, Foglietti et al. teach in step an ozonated deionized water rinse (liquid form) is employed to form an interfacial oxide over the exposed portion of the base region (column 3, [0038, first paragraph] and column 4, [0041, first paragraph]) where the ozonated substance has the required concentration in paragraph 13.

It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include the liquid form of ozonated substance and the required concentration of the ozonated substance in Gardner et al and DeTar in order to have a dielectric layer with good interfacial oxidation.

Regarding Claim 32, the required ozonated substance concentration is disclosed in paragraph 13 of Foglietti et al.

Regarding Claim 34, Foglietti uses ozonated deionized water which is in liquid form.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fazli Erdem whose telephone number is (571) 272-1914. The examiner can normally be reached on M - F 8:00 - 5:00.

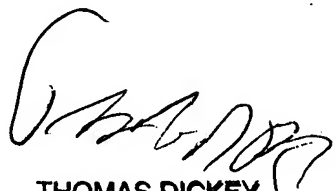
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Purvis can be reached on (571) 272-1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FE

August 7, 2007



THOMAS DICKEY
PRIMARY PATENT EXAMINER